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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/713,339	11/14/2003	Rainer Ostermann	35156US1	9850

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EXAMINER
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GREENHUT, CHARLES N

ART UNIT	PAPER NUMBER
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3652

DATE MAILED: 03/09/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

10/713,339

**Applicant(s)**

OSTERMANN ET AL.

**Examiner**

Charles N. Greenhut

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 1/12/04 & 2/6/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

**I. Drawings**

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the loadlock arrangement comprising at least one of a treating and of a coating arrangement as recited in claim 19 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.
2. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

**II. Specification**

1. The specification is objected to because "275709" on page 4 line 5 should read -5275709-.

**III. Claim Objections**

1. Claim 2 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Dependent claims must contain all the limitations of the parent claims. For purposes of examination on the merits, examiner assumes that claim 2 should be written in independent form and recite paragraphs (a), (b), and (c) identically to claim 1 and additionally recite paragraph (d<sub>2</sub>) of claim 2.
2. Claim 19 is objected to because “one of a treating and of a coating arrangement” should read - one of a treating and a coating arrangement-.
3. Claim 20 is objected to because “said processing station and back into said vacuum transport chamber” in line 18-19 should read -said processing station and back into said vacuum transport chamber-.
4. Claim 20 is objected to because “said transport chamber” in lines 21 and 23 should read -said vacuum transport chamber-.

#### **IV. Claim Rejections - 35 USC § 112**

The following is a quotation from the relevant paragraphs of 35 U.S.C. 112:

(2) The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

1. Claims 5-6 and 18-19 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

1.1. Claims 5 and 6 recite the limitation “said rotational movement” in line 1-2. There is insufficient antecedent basis for this limitation in the claim.

1.2. With respect to claim 18, a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 18 recites the broad recitation "at least 1m<sup>2</sup>", and the claim also recites "at least 2m<sup>2</sup>" and "at least 4m<sup>2</sup>" which are narrower statements of the range/limitation.

1.3. With respect to claim 19, the specification fails to provide proper antecedent basis for the loadlock arrangement comprising at least one of a treating and a coating arrangement. See 37 CFR 1.75(d)(1) and MPEP § 608.01(o).

## **V. Claim Rejections - 35 USC § 102**

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

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(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claim(s) 1, 3/1, 4/3/1, 5/4/3/1, 6/5/4/3/1, 7/1, 9/1, 10/1, 11/10/1, 12/10/1, 19/1, 20, 21 is/are rejected under 35 U.S.C. 102(b) as being anticipated by ANDERLE (US 5,275,709 A).

1.1. With respect to claim 1, ANDERLE discloses a vacuum transport chamber (7), robot (13), processing chamber (4a) communicating by a pass-through opening, and load-lock (5) forming a tower (A).

1.2. With respect to claims 3/1 and 4/3/1, ANDERLE additionally discloses a horizontal substrate support (8) rotatable about a vertical axis.

1.3. With respect to claims 5/4/3/1 and 6/5/4/3/1, ANDERLE additionally discloses rotational movement limited to at most 45°.

1.4. With respect to claim 7/1, 9/1, 10/1, 11/10/1, and 12/10/1, ANDERLE additionally discloses a support (8) driven in horizontal and vertical directions (D)/(E)/(F)/(G), single substrate processing module (4a) and single substrate input/output load-lock (5).

1.5. With respect to claim 19/1, ANDERLE additionally discloses a coating arrangement (4a-e).

1.6. With respect to claim 20, ANDERLE discloses introducing (F) a substrate (6) into a load lock (5), transporting the substrate (6') into a vacuum chamber (7), moving vertically up (D) or down (E), introducing the substrate (6'') into a processing chamber (4a), treating the substrate (6''), horizontally removing the substrate (6'')

back into the vacuum chamber (7), vertically transporting (D)/(E), horizontally transporting into load-lock (5) and removing (G) horizontally.

1.7. With respect to claim 21, ANDERLE additionally discloses moving exclusively linearly.

2. In the alternative, claim(s) 1 is/are rejected under 35 U.S.C. 102(a) as being anticipated by CHOI (US 2002/0168251 A1).

2.1. With respect to claim 1, CHOI discloses a vacuum transport chamber (30e), robot (Rb), processing chamber (36e) communicating by a pass-through opening, and load-lock (34e) forming a tower (Fig. 12).

## **VI. Claim Rejections - 35 USC § 103**

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claim(s) 2, 3/2, 4/3/2, 5/4/3/2, 6/5/4/3/2, 7/2, 9/2, 10/2, 11/10/2, 12/10/2, 14, 15, and 19/2 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ANDERLE in view of OGATA (US 6,313,903 B1).

1.1. With respect to claim 2, OGATA teaches two load-lock-processing towers (Fig. 4). It would have been obvious to one of ordinary skill in the art to modify ANDERLE with the additional tower of OGATA in order to optimize system performance.

1.2. With respect to claims 3/2 and 4/3/2, ANDERLE additionally discloses a horizontal substrate support (8) rotatable about a vertical axis.

- 1.3. With respect to claims 5/4/3/2 and 6/5/4/3/2, ANDERLE additionally discloses rotational movement limited to at most 45°.
- 1.4. With respect to claims 7/2, 9/2, 10/2, 11/10/2, and 12/10/2, ANDERLE additionally discloses a support (8) driven in horizontal and vertical directions (D)/(E)/(F)/(G), single substrate processing module (4a) and single substrate input/output load-lock (5).
- 1.5. With respect to claim 14, ANDERLE additionally discloses the load-lock comprising an input.
- 1.6. With respect to claim 15, OGATA teaches exclusively two load-lock-processing towers arranged on opposite sides (Fig. 4).
- 1.7. In the alternative with respect to claim 19/1, and with respect to claim 19/2, ANDERLE additionally discloses a load lock having a coating arrangement (4-e). It would have been obvious to one of ordinary skill in the art to have a coating arrangement in a load lock in order to isolate the substrate during coating.
2. In the alternative, claim(s) 2 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over CHOI (US 2002/0168251 A1).
  - 2.1. With respect to claim 2, the figure 11 embodiment of CHOI teaches two towers. It would have been obvious to one of ordinary skill in the art to combine the figure 11 embodiment with the figure 12 embodiment of CHOI in order to optimize system performance.
3. Claim(s) 8/1, 13/10/1 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ANDERLE in view of YONEMITSU (US 5,788,447 A).



- 3.1. With respect to claims 8/1, and 13/10/1, YONEMITSU teaches batch load-locks (301) and batch processing modules (701). It would have been obvious to one of ordinary skill in the art to modify ANDERLE with the batch processing capabilities of YONEMITSU in order to increase throughput.
4. Claim(s) 8/2, 13/10/2, 16 and 17 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ANDERLE in view of OGATA and further in view of YONEMITSU (US 5,788,447 A).
- 4.1. With respect to claims 8/2 and 13/10/2, YONEMITSU teaches batch load-locks (301) and batch processing modules (701). It would have been obvious to one of ordinary skill in the art to modify ANDERLE in view of OGATA with the batch processing capabilities of YONEMITSU in order to increase throughput.
- 4.2. With respect to claims 16 and 17, OGATA teaches exclusively two load-lock-processing towers (Fig. 4). ANDERLE fails to teach a U-shaped or a Y-shaped footprint. YONEMITSU teaches a U-shaped footprint (Fig. 11) and a Y-shaped (Fig. 13). It would have been obvious to one of ordinary skill in the art to modify ANDERLE in view of OGATA with a U-shaped or a Y-shaped footprint in order to conform to space constraints.
5. Claim(s) 18/1 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ANDERLE in view of BOCKO (The GlassResearcher Vol. 12 No. 1 & 2).
- 5.1. With respect to claim 18/1, ANDERLE fails to specify a substrate size. BOCKO teaches the typical substrate size from 1989 to 2003 (Pg. 27, Table II). Forward interpolation would indicate that the typical size of a substrate would exceed 4m<sup>2</sup>

within a relatively short time from the date of applicants invention. It would have been obvious to one of ordinary skill in the art to modify ANDERLE to accommodate substrates of at least  $1\text{m}^2$ ,  $2\text{m}^2$  or  $4\text{m}^2$  in order to accommodate future generations of substrates.

6. Claim(s) 18/2 is/are rejected under 35 U.S.C. 103(a) as being unpatentable over ANDERLE in view of OGATA and further in view of BOCKO.

6.1. With respect to claim 18/2, ANDERLE fails to specify a substrate size. BOCKO teaches the typical substrate size from 1989 to 2003 (Pg. 27, Table II). Forward interpolation would indicate that the typical size of a substrate would exceed  $4\text{m}^2$  within a relatively short time from the date of applicants invention. It would have been obvious to one of ordinary skill in the art to modify ANDERLE in view of OGATA to accommodate substrates of at least  $1\text{m}^2$ ,  $2\text{m}^2$  or  $4\text{m}^2$  in order to accommodate future generations of substrates.

## **VII. Conclusion**

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
2. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles N. Greenhut whose telephone number is (571) 272-1517. The examiner can normally be reached on 7:30am - 4:00pm EST.
3. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eileen D. Lillis can be reached on (571) 272-6928. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

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4. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CG



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